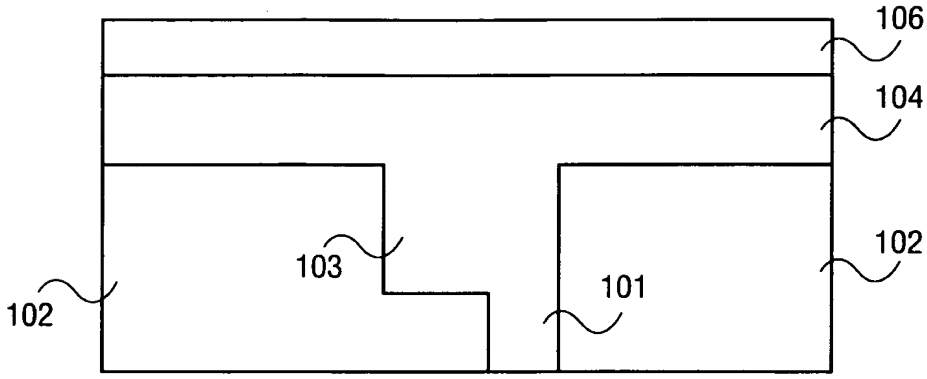

FIG. 1

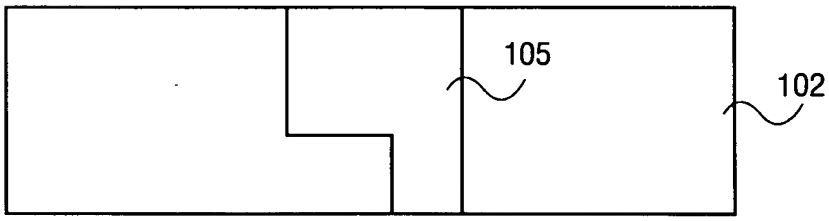

FIG. 2

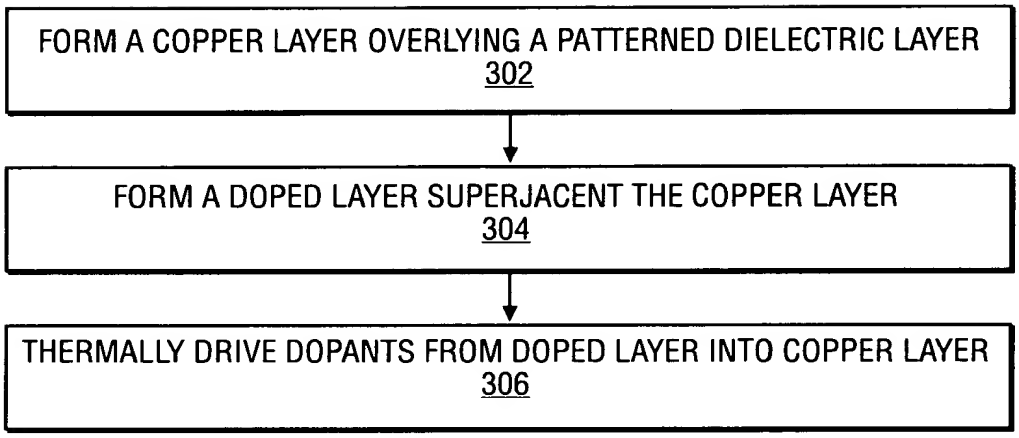
FORM A COPPER LAYER OVERLYING A PATTERNED DIELECTRIC LAYER
302
FORM A DOPED LAYER SUPERJACENT THE COPPER LAYER
304
THERMALLY DRIVE DOPANTS FROM DOPED LAYER INTO COPPER LAYER
306

FIG. 3

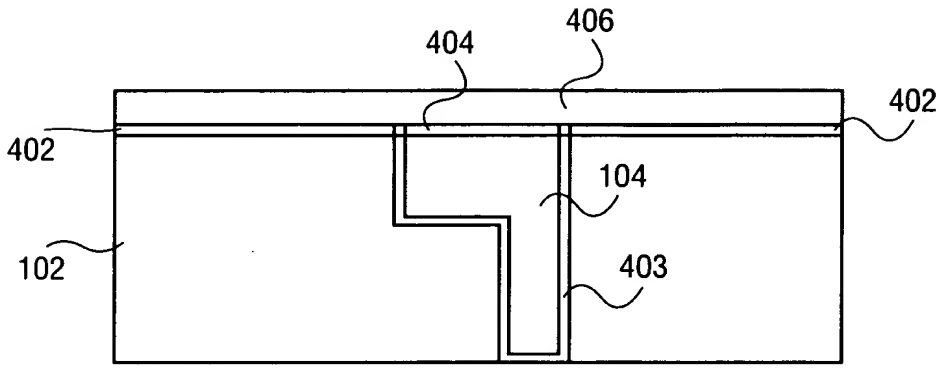

FIG. 4

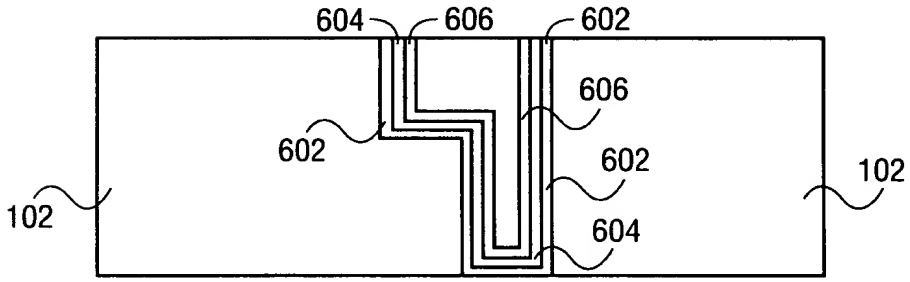

FIG. 6

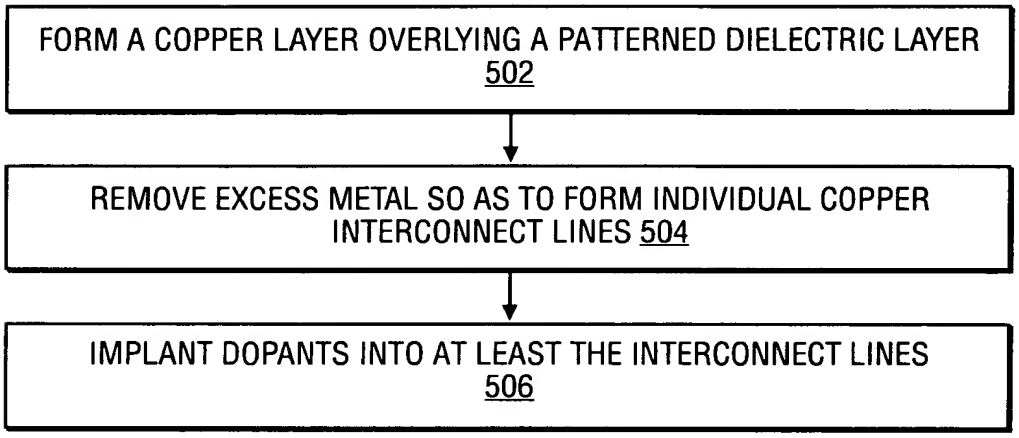
FORM A COPPER LAYER OVERLYING A PATTERNED DIELECTRIC LAYER
502
REMOVE EXCESS METAL SO AS TO FORM INDIVIDUAL COPPER INTERCONNECT LINES 504
IMPLANT DOPANTS INTO AT LEAST THE INTERCONNECT LINES
506

FIG. 5

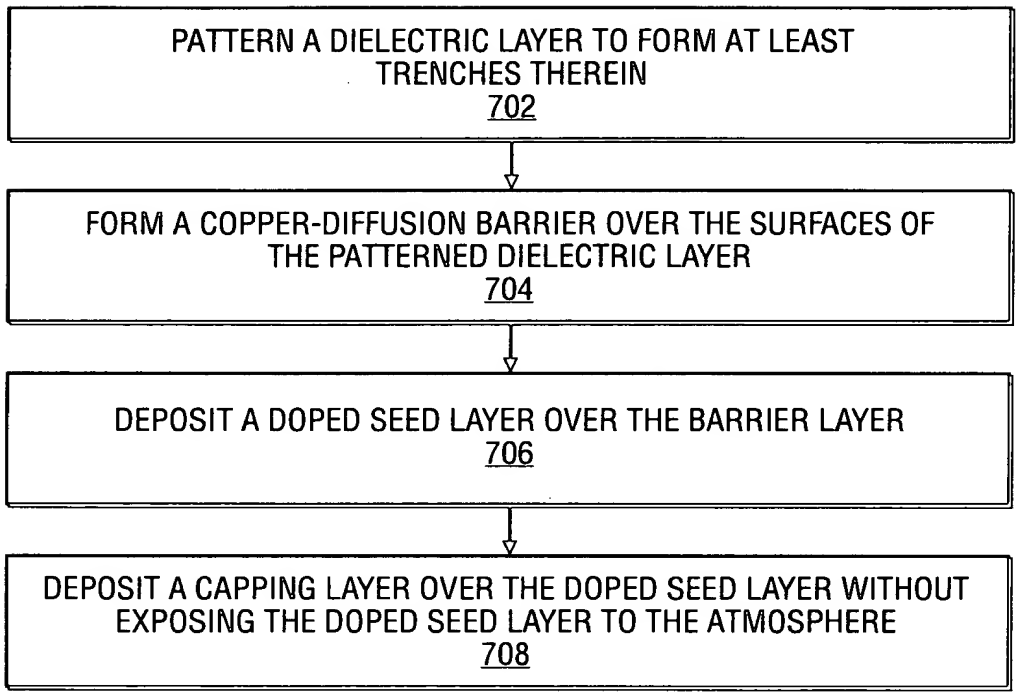
PATTERN A DIELECTRIC LAYER TO FORM AT LEAST TRENCHES THEREIN
702
FORM A COPPER-DIFFUSION BARRIER OVER THE SURFACES OF THE PATTERNED DIELECTRIC LAYER
704
DEPOSIT A DOPED SEED LAYER OVER THE BARRIER LAYER
706
DEPOSIT A CAPPING LAYER OVER THE DOPED SEED LAYER WITHOUT EXPOSING THE DOPED SEED LAYER TO THE ATMOSPHERE
708

FIG. 7

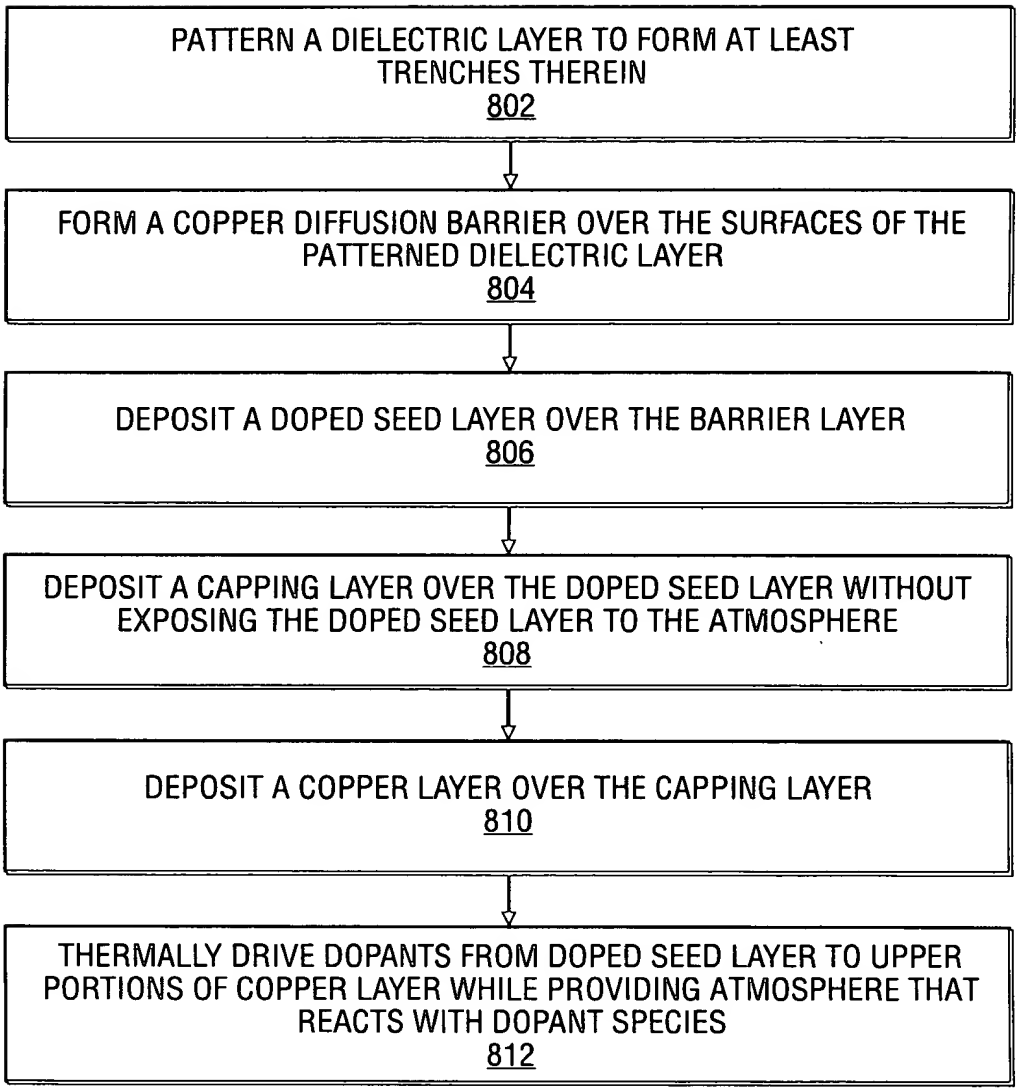
PATTERN A DIELECTRIC LAYER TO FORM AT LEAST TRENCHES THEREIN
802
FORM A COPPER DIFFUSION BARRIER OVER THE SURFACES OF THE PATTERNED DIELECTRIC LAYER
804
DEPOSIT A DOPED SEED LAYER OVER THE BARRIER LAYER
806
DEPOSIT A CAPPING LAYER OVER THE DOPED SEED LAYER WITHOUT EXPOSING THE DOPED SEED LAYER TO THE ATMOSPHERE
808
DEPOSIT A COPPER LAYER OVER THE CAPPING LAYER
810
THERMALLY DRIVE DOPANTS FROM DOPED SEED LAYER TO UPPER PORTIONS OF COPPER LAYER WHILE PROVIDING ATMOSPHERE THAT REACTS WITH DOPANT SPECIES
812

FIG. 8